

App. No. 10 520 842
Paper dated July 20, 2007
Reply to Office action mailed June 28, 2007

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

LIM ET AL

SERIAL NO. 10 520 842

FILED: JANUARY 10 2005

FOR: FLAME RETARDANT
THERMOPLASTIC RESIN
COMPOSITION

Art Unit: 1714

Examiner: SZEKELY, P. A.

Docket No: DKC 1755

Commissioner for Patents
Alexandria, VA 22313

AMENDED APPEAL BRIEF

Attached is an amended Appeal Brief in which the identification of the claims being appealed has been added to the Status of the Claims section.

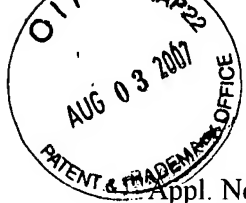
Respectfully submitted,

BY

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By



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AMENDED APPEAL BRIEF

This is an appeal of the Primary Examiner's Final rejection of claims 1-7.

REAL PARTY IN INTEREST

The real parties in interest is the Assignee of the entire interest, Cheil Industries Inc.

RELATED APPEALS AND INTERFERENCES

There are two commonly owned applications which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal. An Appeal Brief was filed in Serial No. 10 489 545 (original filing date, March 12, 2004). An Appeal Brief is being concurrently filed in Serial No. 10 520 571 (original filing date, January 7, 2005).

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STATUS OF CLAIMS

Claims 1-7 stand rejected under 35 U.S.C. §112, first paragraph as failing to comply with the written description requirement. This is an appeal of the rejections of claims 1-7.

STATUS OF AMENDMENTS

No amendments were filed subsequent to final rejection.

SUMMARY OF CLAIMED SUBJECT MATTER

The only independent claim is claim 1. Claim 1 is directed to a flame retardant polycarbonate thermoplastic resin composition of (A) a polycarbonate resin, (B) a rubber modified vinyl-grafted copolymer, (C) an optional vinyl copolymer, (D) a mixture of (d₁) a cyclic oligomeric phosphazene compound and (d₂) an oligomeric phosphoric acid ester as a flame retardant, and (E) a fluorinated polyolefin resin (see specification, page 4, lines 3-8). The polycarbonate compositions employing a mixture of cyclic phosphazene oligomer and oligomeric phosphoric acid ester show good impact strength, heat resistance, flame retardancy, heat resistance, thermal stability, processability and appearance.

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

Whether claims 1-8 are unpatentable under 35 U.S.C. §112, first paragraph for failing to meet the written description requirement

The specification as filed and original claim 1 recited that component (B) was prepared by graft-polymerizing (b₁), "a monomer mixture consisting of about 50 to 95 % by weight of" styrene monomers and others and about 5 to 50 % by weight of other monomers, onto (b₂). Component (D) was recited as a mixture "consisting of" components (d₁) and (d₂) in the abstract and original claim 1. In the detailed description of component (D), the specification also states that (D) "is a mixture of (d₁) . . . and (d₂)" (see specification page 9, lines 12-14) without use of the phrase "consisting of".

Applicants' specification does not describe the exclusion of other monomers or compounds in (B) and (D) as being essential or critical to the operation or patentability of the claimed invention. There is nothing in the specification which teaches that other monomers could not be used included in the monomer mixture of (b₁) or that other compounds could not be used in the mixture of component (D). In fact, the specification teaches that other phosphoric acid flame retardants could be included in the claimed compositions (see specification page 13, lines 3-4).

Claim 1 was amended to replace the term "consisting" with "comprising" in the recitation of component (B) and component (D). After rejection by the Examiner, the term "comprising" was deleted in the last Amendment. Amendment of the specification deleting "consisting" was objected to by the Examiner.

In the Final rejection, the Examiner rejected claim 1 and its dependent claims 2-7 as being unpatentable under 35 U.S.C. §112, first paragraph for failing to meet the written description requirement. In the Final rejection, the Examiner stated that "elimination of the term 'comprising' from claim 1 parts (B) and (D) is not equivalent to the original claims which stated 'consisting of' and broadens the scope of the claims. The open language of the claims allows the presence of other components, which are not part of the original invention".

The Examiner did not present any evidence or technical reasoning to show why a person skilled in the art would not recognize in Applicants' disclosure a description of the invention defined by the claims. The Examiner did not specifically respond to the arguments presented in the Amendment dated June 13, 2006.

ARGUMENT

The only rejection is the rejection of claims 1-7 under 35 U.S.C. §112, first paragraph for failing to meet the written description requirement. The inquiry into whether the description requirement is met must be determined on a case-by-case basis and is a question of fact. *In re Wertheim*, 541 F.2d 257, 262, 191 USPQ 90, 96 (CCPA 1976). A description as filed is presumed to be adequate, unless or until sufficient evidence or reasoning to the contrary has been

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presented by the examiner to rebut the presumption. *In re Marzocchi*, 439 F.2d 220, 224, 169 USPQ 367, 370 (CCPA 1971).

The Examiner, therefore, must have a reasonable basis to challenge the adequacy of the written description. The Examiner has the initial burden of presenting by a preponderance of evidence why a person skilled in the art would not recognize in an applicant's disclosure a description of the invention defined by the claims. *Wertheim*, 541 F.2d at 263, 191 USPQ at 97.

The Examiner has not provided any evidence or technical reasoning why one skilled in the art would not have recognized that the Applicants were in possession of the invention as claimed in view of the disclosure as filed.

The Examiner's statement that "elimination of the term 'comprising' from claim 1 parts (B) and (D) is not equivalent to the original claims which stated 'consisting of' and broadens the scope of the claims" does not address the issue, i.e., why one skilled in the art would not have recognized that the Applicants were in possession of the invention as claimed. The disclosure and the examples all disclose component (B) and component (D) as claimed. There is nothing in the specification which would teach one skilled in the art that other monomers could not be included in either the mixtures of (B) and (D). The ordinary meaning of "consisting of" (e.g., "made up of") when used in a specification does not have the restrictive legal meaning given to the term when used in the *claims* of a U.S. patent application. Applicants' specification does not describe the exclusion of other monomers or compounds in (B) and (D) as being essential or critical to the operation or patentability of the claimed invention.

The Examiner fails to explain why the original specification, including the examples, does not support a monomer mixture for component (B) and component (D) as recited in the amended claims. As noted previously, the detailed description in the specification states that (D) "is a mixture" without use of the phrase, "consisting of".

The Examiner statement that "[T]he open language of the claims allows the presence of other components, which are not part of the original invention" also fails to address the issue and fails to establish a *prima facie* case. The exclusion of other monomers in (B) or (D) is not part of the original invention. Applicants' specification does not describe the exclusion of other

monomers or compounds in (B) and (D) as being essential or critical to either the operation or patentability of the claimed invention.

Whether or not the claims are open to other monomers is not an issue with regard to the written description requirement. The issue is whether one skilled in the art would have recognized that the Applicants were in possession of the invention as claimed. Furthermore, in U.S. patent applications, very few claims reciting a mixture use the term “consisting of” unless the exclusion is essential to patentability. The vast majority of claims in U.S. patent applications omit the term and therefore are “open” to components other than those specifically recited. Under the Examiner’s erroneous reasoning, claims that do not use “consisting” would not meet the written description requirement since the claims would be open to other elements which are not specifically disclosed in the specification.

The removal of an unnecessary limitation does not violate the written description requirement. *In re Peters*, 723 F.2d 891, 221 USPQ 952 (Fed. Cir. 1983)

Applicants submit that one skilled in the art would recognize that there was no reason why Applicants’ invention requires the limitation of excluding all monomers for component (B) other than those recited in claim 1. The removal of an unnecessary limitation does not violate the written description requirement. *In re Peters*, 723 F.2d 891, 221 USPQ 952 (Fed. Cir. 1983) (In a reissue application, a claim to a display device was broadened by removing the limitations directed to the specific tapered shape of the tips without violating the written description requirement. The shape limitation was considered to be unnecessary since the specification, as filed, did not describe the tapered shape as essential or critical to the operation or patentability of the claim). Applicants’ specification does not describe the exclusion of other monomers or compounds in (B) and (D) as being essential or critical to the operation or patentability of the claimed invention.

Deletion of the term “consisting” does not add any new and substantive information which might change the invention. Deletion of “consisting” does not add any new and substantive information to the specification or the claims. Under U.S. patent practice, the use of the term “consisting” in original claim 1 excludes all monomers from the monomer mixture used

to produce component (B). There is nothing in Applicants' specification which discloses that all monomers other than those recited for component (B) must be excluded from the monomer mixture used to produce component (B). The Examiner does not dispute that the rubber modified vinyl copolymer of component (B) is well known in the art. What is conventional or well known to one of ordinary skill in the art need not be disclosed in detail (*Capon v. Eshhar*, 418 F.3d 1349, 1357, 76 USPQ2d 1078, 1085 (Fed. Cir. 2005))("The 'written description' requirement must be applied in the context of the particular invention and the state of the knowledge. . . . As each field evolves, the balance also evolves between what is known and what is added by each inventive contribution").

The claimed compositions are described in the specification. If a skilled artisan would have understood the inventor to be in possession of the claimed invention at the time of filing, even if every nuance of the claims is not explicitly described in the specification, then the adequate description requirement is met. (*Martin v. Johnson*, 454 F.2d 746, 751, 172 USPQ 391, 395 (CCPA 1972) (stating "the description need not be *in ipsius verbis* to be sufficient"). The specification describes each of the components of the claimed compositions and the monomers which can be used for component (B). Applicants are not required to describe all *additional* monomers which one skilled in the art could readily determine to be useful in component (B).

The amendment to remove the term "consisting" removes unnecessary limitations and obvious error whereby Applicants originally claimed less than they had a right to claim by inadvertently using a term in the claims which has a meaning which is peculiar to U.S. patent practice. The amendment removing the term "consisting" was for the purpose of clarifying what is inherently disclosed in the specification regarding *well known* rubber modified graft copolymers. The error in using "consisting of" for component (D) is clear from the detailed description where it is stated that (D) "is a mixture" without the phrase, "consisting of".

The use of the term "consisting" in the specification and claim 1 was made in error. As discussed previously, the copolymers of component (B) are well known in the art. The present application is based on a patent application which was written and filed in another country in a non-English language. The error in the claims was corrected in the U.S. national stage

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application prior to examination. An amendment to correct an obvious error does not constitute new matter where one skilled in the art would not only recognize the existence of the error in the specification, but also recognize the appropriate correction. *In re Oda*, 443 F.2d 1200, 170 USPQ 268 (CCPA 1971).

Applicants submit that the Examiner erred in rejecting the claims as being unpatentable under 35 U.S.C. §112, first paragraph for failing to meet the written description requirement because the Examiner has failed to either support his position by evidence or technical reasoning and has failed to rebut the presumption that Appellants' description was adequate as filed. Applicants respectfully request reversal of the Examiner's rejections under 35 U.S.C. §112.

Respectfully submitted,

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CLAIMS APPENDIX

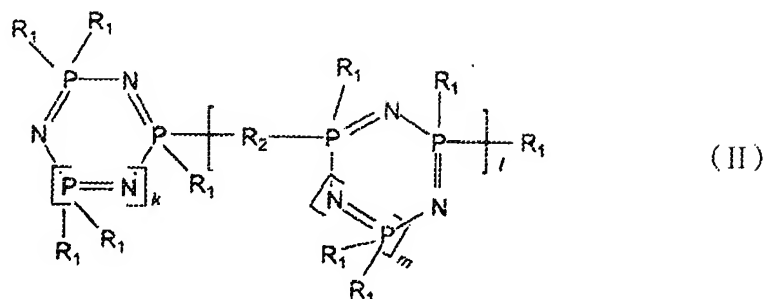
Claim 1. A flame retardant thermoplastic resin composition comprising:

(A) 45 to 95 parts by weight of a polycarbonate resin;

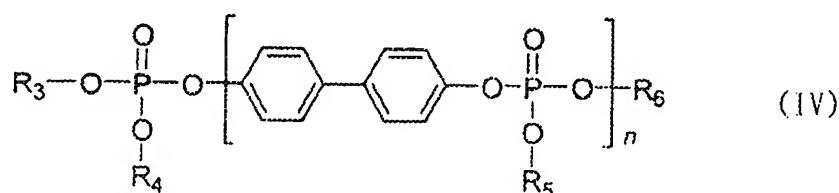
(B) 1 to 50 parts by weight of a rubber modified vinyl-grafted copolymer prepared by graft-polymerizing (b₁) 5 to 95 % by weight of a monomer mixture of 50 to 95% by weight of at least one of styrene, α -methylstyrene, halogen- or alkyl-substituted styrene, C₁₋₈ methacrylic acid alkyl ester, C₁₋₈ acrylic acid alkyl ester, or a mixture thereof and 5 to 50 % by weight of acrylonitrile, methacrylonitrile, C₁₋₈ methacrylic acid alkyl ester, C₁₋₈ acrylic acid alkyl ester, maleic acid anhydride, or C₁₋₄ alkyl- or phenyl N-substituted maleimide onto (b₂) 5 to 95 % by weight of a rubber polymer selected from the group consisting of butadiene rubber, acryl rubber, ethylene-propylene rubber, styrene-butadiene rubber, acrylonitrile-butadiene rubber, isoprene rubber, copolymer of ethylene-propylene-diene (EPDM), polyorganosiloxane-polyalkyl (meta)acrylate rubber complex and a mixture thereof;

(C) 0 to 50 parts by weight of a vinyl copolymer prepared from (c₁) 40 to 95 % by weight of at least one of styrene, α -methyl styrene, halogen or alkyl substituted styrene, C₁₋₈ methacrylic acid alkyl ester, or C₁₋₈ acrylic acid alkyl ester and (c₂) 5 to 60 % by weight of at least one of acrylonitrile, methacrylonitrile, C₁₋₈ methacrylic acid alkyl ester, C₁₋₈ acrylic acid alkyl ester, maleic acid anhydride, or C₁₋₄ alkyl or phenyl N-substituted maleimide;

(D) 1 ~ 30 parts by weight of a mixture of organic phosphorous compounds (d₁) 1 ~ 50 % by weight of a cyclic oligomeric phosphazene compound represented by the following Formula (II) and (d₂) 99 ~ 50 % by weight of an oligomeric phosphoric acid ester compound represented by the following Formula (IV), per 100 parts by weight of the sum of (A), (B) and (C); and



wherein R_1 is alkyl, aryl, alkyl substituted aryl, aralkyl, alkoxy, aryloxy, amino, or hydroxyl or alkoxy substituted with alkyl, aryl, amino, or hydroxy group or aryloxy substituted with alkyl, aryl, amino, or hydroxy group; k and m are an integer from 0 to 10; R_2 is C_{6-30} dioxyaryl or alkyl substituted C_{6-30} dioxyaryl derivative; and l is a degree of polymerization and the average value of l is from 0.3 to 3;



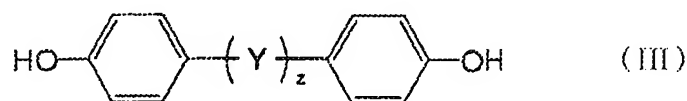
wherein R_3 , R_4 , R_5 and R_6 are independently a C_{6-20} aryl group or an alkyl-substituted C_{6-20} aryl group, respectively, and n is an integer from 1 to 5 representing the number of repeating units and the average value of n in the oligomeric phosphoric acid ester is 1 to 3.

(E) 0.05 to 5.0 parts by weight of a fluorinated polyolefin resin per 100 parts by weight of (A)+(B)+(C).

Claim 2. The flame retardant thermoplastic resin composition as defined in claim 1, wherein said cyclic oligomeric phosphazene compound has a linear structure.

Claim 3. The flame retardant thermoplastic resin composition as defined in claim

1, wherein R_1 is phenoxy and R_2 is a derivative from catechol, resorcinol, hydroquinone, or the bisphenylenediol represented by the following Formula (III):



wherein Y is alkylene of C_{1-5} , alkylidene of C_{1-5} , cycloalkylidene of C_{5-6} , S or SO_2 , and z is 0 or 1.

Claim 4. The flame retardant thermoplastic resin composition as defined in claim 1, wherein said R_3 , R_4 , R_5 and R_6 are phenyl or naphthyl groups.

Claim 5. The flame retardant thermoplastic resin composition as defined in claim 1, wherein said cyclic oligomeric phosphazene compound has a structure with a branched chain at the main chain.

Claim 6. The flame retardant thermoplastic resin composition as defined in claim 1, wherein said R_3 , R_4 , R_5 and R_6 are a respectively alkyl-substituted phenyl in which alkyl is methyl, ethyl, isopropyl, or t-butyl.

Claim 7. The flame retardant thermoplastic resin composition as defined in claim 1, wherein said fluorinated polyolefin resin has an average particle size of 0.05 to $1,000 \mu\text{m}$ and a density of 1.2 to 2.3 g/cm^3 .

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EVIDENCE APPENDIX

NONE

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RELATED PROCEEDINGS APPENDIX

To date, no Board decision has been issued in the appeal in copending Serial No 10 489 545. No Board decision has been issued in the appeal in copending Serial No. 10 520 571 being filed concurrently with the present Brief.